

Network Security (CYB 630)

Dr. Mohammed Anbar



عرض توجيہي Orientation show



Who am I?



Dr. Mohammed Anbar

Senior lecturer at National Advanced IPv6 Centre of Excellence (NAv6), Universiti Sains Malaysia (USM)

2013	PhD in Advanced Internet Security and Monitoring. National Advanced IPv6 Centre of Excellence (NAv6) , Universiti Sains Malaysia (USM), Malaysia
2009	Master of Information Technology Universiti Utara Malaysia (UUM), Malaysia.
2007	Bachelor of Computer System Engineering AL-Azhar University, Gaza, Palestine .



Course details

Network Security (CYB630)

3 credit hours



Course details (cont.)

- This course provides the fundamental knowledge needed to analyze risks to the system and implement a workable security policy that protects information assets from potential intrusion or damage.
- Students will learn about a variety of network security attacks such as attacks on the web and email.
- Also, students will learn which countermeasures to deploy to thwart potential attacks.



Course outcomes

- 1 Understand network infrastructure security,
- 2 To be familiar with attacks detection mechanisms (firewall, IDS, and IPS) and a clear understanding of their importance,
- 3 To master fundamentals of secret and public cryptography,
- 4 provide students with a high-level understanding of web and email security



Roadmap

- Web security
- Email Security

Introduction to web and email security

04

Introduction to detection mechanisms

02

- Firewall
- Intrusion Detection System (IDS)
- Intrusion Preinvasion System (IPS)
- Honeypot and honeynets

- Symmetric encryption algorithms
- Asymmetric encryption algorithms
- HASH function
- Public Key Infrastructure

03

Introduction to cryptograph

01

Network infrastructure security

- Introduction to infrastructure security
- Infrastructure security vs Information Security
- Switching, DHCP, and DNS security
- IPv6 Security



Learning Resources

1. Vincent Nestler, Gregory White, wm. Arthur Conklin, Principles of Computer Security: CompTIA Security+ and Beyond – Lab Manual, ISBN: 978-0-07-174856-8, MHID: 0-07-174856-3, McGraw Hill, 2011.
2. Aumasson, J. P. (2017). Serious cryptography: a practical introduction to modern encryption. No Starch Press.
3. Stallings, W. (2006). Cryptography and network security principles and practices 4th edition
4. Wong, A., & Yeung, A. (2009). Network infrastructure security. Springer Science & Business Media.



Lecture Structure

Module	Course Unit	Week #
1	Lecture 1: Introduction to Networks infrastructure security (part 1)	1
2	Lecture 2: Introduction to Networks infrastructure security (part2)	2
3	Lecture 3: IPv6 security	3
4	Lecture 4: Firewall	4
5	Lecture 5: Intrusion Detection Systems and Intrusion Prevention Systems	5
6	Lecture 6: Cryptography	6
7	Lecture 7: Public Key Infrastructure	7
8	Lecture 8: Web security (part 1)	8
9	Lecture 9: Web security (part 2)	9
10	Lecture 10: Email Security	10



Course Assessment



- ▶ Quiz (80% marks)
 - ▶ Number of Quizzes (Weekly)
 - ▶ 8 Marks for each Quiz.

- ▶ Final Exam (20%)



Course Assessment (cont.)

الأعمال	توزيع الدرجات - 100%
محاضرة مسجلة أسبوعيًا- السبت من كل أسبوع	حضور المحاضرة - حل الأسئلة المصاحبة
اختبار قصير مصاحب للمحاضرة بشكل أسبوعي	8 درجات لكل اختبار قصير - بمجموع 80 %
حلقة نقاش افتراضية أسبوعية لمناقشة محتوى المحاضرة المسجلة	الحضور اختياري
الاختبار النهائي	20%



Thank You